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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,220	03/22/2004	Sabina J. Houle	884.C30US2	3305
7590	06/29/2004		EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. Box 2938 Minneapolis, MN 55402			HUYNH, ANDY	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/807,220	Applicant(s) HOULE ET AL.	
	Examiner Andy Huynh	Art Unit 2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspond nc address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 7-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

In the Preliminary Amendment dated March 22, 2004, Applicant has amended the specification, and canceled claims **1-6 and 12-25** is acknowledged. Accordingly, claims **7-11** are currently pending in the application, which is a divisional of Application No. 10/118,220 filed April 5, 2002, U.S. Patent No. 6,756,669.

#### ***Claim Objections***

Claims **7 and 11** are objected to because of the following reasons.

In claim **7**, line 2, the “rectangular” is not clearly disclosed or described in the specification and drawings.

In claim **11**, line 2, the “clamp” is not disclosed in the specification, it should read –clip--.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim **8** is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim **8** recites the limitation “the forming” is vague and confusing. Which is the forming in claim **7**, “the forming a mass of material ...” or “the forming at least one downset leg ...” referred to?

***Claim Rejections - 35 U.S.C. § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims **7 and 9** are rejected under 35 U.S.C. 102(e) as being anticipated by Tosaya et al. (USP: 6,483,169 hereinafter referred to as "Tosaya").

Regarding claim 7, Tosaya discloses in Figs. 2 and 5 and related texts as set forth in column 3, line 1-column 4, line 4, a method of forming a heat spreader (100) comprises:

forming a mass of material/an upper portion (102) of the heat spreader approximately rectangular in shape (Fig. 2); and

forming at least one downset leg/flanges (108, 110) on the mass of material.

Regarding claim 9, Tosaya discloses in Figs. 2 and 5 wherein the method further comprises forming at least one corner on the mass of material, wherein the at least one downset leg/flange is formed in the vicinity of the corner.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 102(e) as being anticipated by Tosaya et al. (USP: 6,483,169 hereinafter referred to as "Tosaya") in view of Domadia et al. (USP: 5,949,137 hereinafter referred to as "Domadia").

Tosaya discloses the claimed limitations in claim 7 except for the method wherein at least one void is formed on the at least one downset leg, wherein the void is configured to receive at least one mechanical attachment device. Domadia teaches in Fig. 2 the mounting holes (26) formed at the corners (28) of the heat spreader (15) of the flip chip packaging assembly. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to form the mounting holes at the corners of the heat spreader, as taught by Domadia to modify and incorporate into Tosaya's structure to form the claimed invention in order for receipt of mounting posts of the packaging assembly (see Domadia, column 2, lines 39-42).

Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Tosaya et al. (USP: 6,483,169 hereinafter referred to as "Tosaya") in view of Tarter et al. (USP: 6,512,675, hereinafter "Tarter").

Tosaya discloses the claimed limitations in claim 7 except for the at least one downset leg is formed to be configured to receive at least one clamp. Tarter teaches in Fig. 2 the heat sink-package assembly (100) comprising the clips (118), each of the clips (118) is snapped over the flanges (114) and (116). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize Tarter's teaching of the clip using in the heat sink-package

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assembly to modify and incorporate into Tosaya's structure to form the claimed invention in order to provide sufficient strength to hold the heat sink to the package lid/the heat spreader (see Tarter, column 3, lines 29-30).

### ***Conclusion***

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy Huynh, (571) 272-1781. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The Fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the -status of this application or proceeding should be directed to the receptionist whose phone number is (703) 308-0956.

AH

June 25, 2004



Andy Huynh

Patent Examiner